

WHAT IS CLAIMED IS:

1. A method for processing an image comprising:
  - identifying pixels in the image which are less critical; and
  - substituting data into identified pixels, the data being chosen to provide a desired characteristic for processing the image.
2. The method of claim 1, further comprising:
  - generating a hole-image by setting to zero pixel values of pixels identified to be less critical to the image; and
  - sub-sampling the hole-image, by averaging non-zero pixel values in pixel neighborhoods to obtain sub-sampled pixel values for the sub-sampled hole-image.
3. The method of claim 2, further comprising:
  - averaging non-zero sub-sampled pixel values of the sub-sampled hole-image to obtain an average value;
  - setting sub-sampled pixel values of zero to the average value of the non-zero sub-sampled pixel values.
4. The method of claim 1, wherein the desired characteristic is at least one of a compression characteristic and a processing speed.
5. The method of claim 1, wherein the substituted data is an average of data values of the non-identified pixels.
6. A method for processing an image to form a background plane and N-binary foreground planes, comprising:
  - inserting zeroes into pixel data for pixels in the background plane corresponding to areas which have been placed into one of the N-binary foreground planes, to generate a hole-image;
  - sub-sampling the hole-image to obtain one or more blocks of sub-sampled pixel values, each of the sub-sampled pixel values having a non-zero value if a corresponding neighborhood has at least one non-zero pixel value, or a zero value if the corresponding neighborhood has all zero pixel values;
  - averaging color values of non-zero sub-sampled pixel values in each of the blocks to obtain a block average color value for each of the blocks; and
  - substituting sub-sampled pixel values of each of the blocks that are equal to zero to the block average color value of each of the blocks.

7. The method of claim 6, further comprising:  
identifying a previous block based on a predetermined criterion; and  
substituting an average color value of the previous block for sub-sampled pixel values in a block in which all of the sub-sampled pixel values are zero.
8. The method of claim 7, wherein the previous block is the previous block as defined by the JPEG order of blocks within a minimum coded unit.
9. The method of claim 6, further comprising one or more of:  
adjusting the image according to predefined requirements; and  
setting a chroma value of a pixel to a midpoint in its allowed range when a luminance value of the pixel is at a maximum of its allowed range.
10. The method of claim 6, wherein sub-sampling the hole-image comprises:  
averaging one or more pixel values within a neighborhood of pixels to obtain a sub-sampled pixel value that corresponds to the neighborhood.
11. The method of claim 10, wherein averaging the pixel values comprises:  
summing the pixel values within the neighborhood of pixels; and  
dividing the sum of pixel values by a number of non-zero pixels, to obtain the sub-sampled pixel value.
12. The method of claim 10, wherein the neighborhood of pixels is a 2x2 neighborhood for luminance data, and a 4x4 neighborhood for chroma data.
13. An apparatus that processes an image, comprising:  
a memory that stores image data and selector data, wherein the selector data identifies less critical portions of the image data; and  
a processor that sets less critical portions of the image data to desired values based on the selector data.
14. The apparatus of claim 13, wherein the processor sets the less critical portions of the image data to zero, to generate hole-image data.
15. The apparatus of claim 14, further comprising:  
a sub-sampling processor that sub-samples the hole-image data and averages the non-zero data values in a block of the sub-sampled hole-image data to obtain a block average value;

a pixel substitutor which substitutes the block average value of the non-zero data values for the zero values in the sub-sampled hole-image data.

16. The apparatus of claim 15, wherein the sub-sampling processor subsamples the hole-image data by setting the sub-sample pixels to values equal to an average of the non-zero pixels in contiguous, non-overlapping pixel neighborhoods.

17. The apparatus of claim 16, further comprising:

a hole-filler that identifies previous blocks based on predefined criteria, and replaces zero values of the blocks of sub-sampled hole-image data with a previous block average value, when the blocks of sub-sampled hole-image data consist entirely of zeroes.

18. The apparatus of claim 17, wherein the previous block is the previous block as defined by the JPEG order of blocks within a minimum coded unit.

19. A computer-readable medium having computer-readable program code embodied therein, the computer-readable program code performing the method of claim 1.

20. A xerographic marking device using the method of claim 1.

21. A digital photocopier using the method of claim 1.